



Photo by: SSgt Jeffrey Allen

I'm here
to tell
YOU



Editor's note: The following article, written by then Maj Allen McLellan and Capt Neil McAskill, first appeared in the July 1985 edition of TAC Attack the forerunner of The Combat Edge. This is an on-going project to pass on timeless lessons learned from the past that still have applications today.

When I entered the squadron that morning, the desk dog told me about another safety read file item that I needed to read and sign off before my night mission. I opened the pubs file and began to read. The message was a familiar one: it seems another pilot rode his aircraft into the ground. On initial climb out, the formation entered the weather and number two went lost wingman. He impacted the ground shortly thereafter, in a 30-degree nose-low attitude with 60 degrees of bank. The safety board findings were predictable: spatial disorientation, failure to transition to instruments, etc. I signed it off and mentally filed it away with the hundreds of other, similar accident and safety reports I had read over the years. Transition to instruments, I thought, that's the kicker. Got to believe those instruments. That had been pounded into me as far back as basic pilot training.

Our mission that night was a practice tactical qualification check with a night air refueling. It was my third consecutive night sortie that week, and one which I approached with waning

penetration, we turned off the arc and established ourselves on a 15-mile ILS final. At 12 miles, we configured for a normal approach. As the WSO read the step-down altitudes, I concentrated on maintaining course alignment and prepared to intercept the glidepath. At 7 miles, with the before landing checks complete, we started our descent — on-course, on-glidepath and on-airspeed.

Passing 2,000 feet, we settled into a fog layer. About 4 miles out on final, I glanced out of the cockpit, looking for some visual cues to confirm that my instruments were accurate. When I looked out over the glare shield, I was overwhelmed with the sensation that we were climbing. I felt — no — I knew we were in a 30- to 40-degree nose high attitude, and that if we continued, the aircraft would ultimately stall. This sensation was reinforced by the fact that all I could see out of the cockpit were stars above a downward sloping layer of fog. This fog layer completely obscured the horizon as well as any ground/sky references. The only ground references that I could see were the faint flickering of the runway sequenced flashing lights off in the distance.

I unconsciously released back-pressure on the stick and came back inside to my instruments. The aircraft quickly transitioned from on-glidepath to well below glidepath. I remember cross-checking each of my critical flight instruments: the VVI was minus 2,000 fpm, the ADI read 5-degrees nose high, the altimeter was decreasing through 1,200 feet MSL, we were on course but at least two dots below glidepath. For the next few seconds (which seemed considerably longer), I struggled with what the data from the instruments were showing me and what every nerve in my body was telling me. I wanted to believe my instruments, but somewhere within the process whereby the brain absorbs data, analyzes it and sends instructions to the muscles to react to that data, the process broke down. I was unable to react. I continued trying to fight this mass of sensory confusion; finally, as the altimeter fell through 1,000 feet, I asked

the WSO to “Take the aircraft.” The pitter immediately came on the controls and started a go-around.

The aircraft started to climb after descending below 700 feet. My internal gyros began to stabilize as we climbed through the fog layer, and the horizon became visible again. I gang-loaded my oxygen regulator took control of the jet, contacted approach and turned to our downwind heading. While on downwind, I tried to reconstruct what had happened and how it affected me. We contacted the SOF and told him, as best we could, what had occurred and asked him to warn other aircraft of a strong visual illusion at 3 to 4 miles out on final. My WSO suggested that he fly the next approach while I monitored. This sounded like a good idea; it allowed me time to regain my composure and study the visual illusion in more detail. By monitoring this second approach, I was able to identify exactly when and where this illusion would take place. I flew the next approach, and then we came around for a full-stop landing. The illusion was so real that on each approach, even though we knew what to expect, we experienced varying degrees of disorientation. The difference was we were prepared for it.

It wasn't until I had landed and talked to a physiologist that I fully understood what had happened. As we descended into the fog, the horizon disappeared and all outside references became either indistinguishable or distorted. It looked as though we were flying through a goldfish bowl. The distant runway lights, along with the sloping fog deck, combined to substitute for the true horizon. Because of the downward slope of the fog deck, I was able to see the stars out over my glare shield. All of these factors led me to believe, instantly and without a doubt, that I was climbing in a nose-high unusual attitude.

Whether or not you understand the details of this event, as I have described them, is unimportant. The likelihood that you will ever see these same atmospheric conditions is probably quite slim. What is important is that you are aware of the power and reality of the visual illusion, so that when it's your turn in the barrel, you will be better prepared.

Lessons Learned

This can happen to you. Like many of you I have been number four at night,

in and out of the weather. I've battled the leans and overcome various types of spatial disorientation with the best of them. I've flown approaches down to Category A minimums, failed to break and had to go around. With each of these little successes my confidence has increased. I began to believe, perhaps as you might now believe, that I was less susceptible to the types of disorientation which can lead to the disastrous results we've all read about in safety magazines and accident reports. Those of you who have experienced something like I've described in this article can relate to my story. For those who have not, my hope is that you will re-examine your beliefs about the power of the visual illusion.

Familiarity breeds complacency. During approach or any other critical phase of flight, our attention needs to be on the task at hand. During a penetration or on final is not the time to be filling out the 781 or thinking about anything other than the safe operation of that “mass of metal and JP-4” entrusted to you. Had this situation been compounded by an emergency or had my WSO not been ready to initiate a go-around, we may not have been here to write this article.

Tell somebody. The first person you should notify when something is wrong or doesn't appear normal is your pilot/WSO. Don't be afraid to speak up or take action if the situation dictates. A sudden plunge to minus 2,000 fpm on the VVI, after being established on the glidepath, must be instantly challenged.

That night, there was another aircraft in the pattern flying approaches before we arrived. The pilot in this aircraft experienced the same visual illusion with frighteningly similar results. He too descended below glidepath and recovered approximately 2.5 miles out at 500 feet AGL. Had the crew thought about notifying the SOF or approach control of the visual illusion, we would have been better prepared to deal with it.

Be prepared. Remember, a visual illusion is just that. It is not a mirage in the desert or an aberration brought on solely by fatigue or other physiological factors. It is a set of atmospheric conditions which have and will cause aircraft losses and aircrew fatalities. All visual illusions will create some degree of spatial disorientation. The impact of this disorientation on the control of your

aircraft will be affected by how well you are prepared, both mentally and physically, to deal with it when it happens.

Epilog

I'd have to say that I am a better pilot now, after that experience. I've flown more night radar missions, in more fog banks, and hung on more wings in the weather. But I notice a more serious tone in my voice when I brief those special interest items, especially that particular item called spatial disorientation. I number myself as one of the fortunate to have experienced the power of the visual illusion and to be able to sit here and say, “I'm here to tell you.” ✈

Photo by: CMSgt Harold Clark



Photo by: TSgt Ben Bloker



Photo by: SSgt Cherie A. Thurlby

